

Letters to the Editor.

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The British Association.

THE discussion about the future of the British Association has turned mainly upon what may be called the "scale effect" consequent upon the vast increase in the activities connoted by the advancement of science. The effect is real enough; the decimal point has been moved on by one or more places in the course of the three-quarters of a century of the life of the Association.

And it is not only science of which this is true. We see the same kind of problem in such common affairs as university education, Parliamentary government, and Treasury control of expenditure. Formulæ which were worked out fifty years ago or more for a certain scale are still being used, but they are not applicable now that the scale is increased tenfold or a hundredfold. Each case has, no doubt, an appropriate solution if we have the courage to face the facts and deal with them instead of ignoring them.

But as regards the British Association there is a social side of the question which has not received much attention. The Association does not select a town out of all England, Wales, Scotland, and Ireland at which to hold a summer meeting. It is invited to honour a town with its assemblies. The first magistrate and other leading citizens attend a meeting of the Association and offer the hospitality of their city.

If we go back some years beyond the beginning of the present century, the invitation meant an offer of the personal hospitality of the citizens to the active members of the Association. In those days the prosperous householders of the larger towns and their neighbourhood had spare rooms which were intended to be used, and were used, for the purpose of entertaining friends. The devotees of science were interesting people with whom to spend a week was a pleasure worth seeking. To offer hospitality for an astronomer from Ireland, a mathematician from Cambridge, an economist from Oxford, a geographer from London, a geologist from Wales, or a chemist from Scotland was not altogether a one-sided bargain. What these guests did with the time devoted to the discussion of recondite matters of their own science in the Sections was not the *quid pro quo*. Their hosts would become members or associates as part of the invitation, and possibly attend the Sections in order to be able to show their guests the way; but their insight into science and its methods was obtained by having one or more successful exponents of science staying in the house. They would probably learn more of what went on in the Sections from their guests' account of it over breakfast than by hours of personal attendance in a room where the difference between drivel and discovery is not always signalled. A party of half a dozen guests at one of the larger houses was brilliant company well worth entertaining.

The president's address dealt with the moving scientific topics of the day, the evening lectures were the last word in scientific exposition. The evening parties gave guests and hosts an opportunity of widening the circle of acquaintance, and the excursions often developed acquaintance into friendship. The guests left with a feeling of personal obligation which was not without opportunity of requital. If that feature of the British Association is lost in the effort to make the world better for somebody else, the loss of the grace of domestic hospitality is profound.

NO. 2658, VOL. 106]

At the time it was not only a simple and natural grace, but also an essential preliminary to an invitation. To house a thousand visitors in the early days of the Association otherwise than by private hospitality would have puzzled the most energetic of local secretaries.

Very little money beyond the cost of the ticket came into the question. On the joint invitation of the authorities of a town, halls were available for meetings and other facilities provided. There remained to be paid for an abundant supply of stationery—which members appreciated, but not always with due respect—the printing of the journal and other incidental expenses, and one or more evening parties.

As time went on personal service became merged in or supplemented by a guarantee fund. The actual expenses of a meeting of the British Association do not appear in its accounts. In later years it was a shock to learn that people who had spare rooms actually absented themselves from home at the time when the Association was known to be coming; when it was our turn to act as hosts we thought the plea of an inexorable summer holiday rather a shabby excuse. But from the occasion of the meeting of a certain jubilee year hotel accommodation became the rule for the most active members of all the Sections, and members may now go through a meeting of the Association without making a single acquaintance in the town. There is no small danger of the meetings being changed from occasions for the exercise of graceful hospitality into the periodical lumbering of a rather ineffective machine.

I have no particular wish to be simply *laudator temporis acti*. If we have definitely turned our backs on the past and the pleasure of company has vanished, with all that that must have meant for a town in the dissemination over the table or round the hearth of information about science and education, where to go, and what to see or to read and all the rest, are we now instead to deliver within a week, in return for a guarantee fund, something which will be recognised as its equivalent in scientific exposition? If so, we shall want a strength of organisation that is at least quite uncommon in the scientific world, and I do not envy the organising secretary who has the duty in hand. The existing machinery is certainly not sufficient. The equivalent of twelve men enlightening a great town on the mysteries of all the sciences by talking for twelve hours each in a single week gives me the same impression as "seven maids with seven mops sweeping for half a year."

"Do you suppose," the Walrus said,
"That they would make it clear?"
"I doubt it," said the Carpenter.

What I am quite clear about is that if you would allow a company of meteorologists, magneticians, seismologists, and other students of the earth and the sky to meet together for a week and discuss matters of common interest, the community that entertained us should not complain for lack of interest; but if you tell me that I have to expound modern meteorology to the man in the street in a paper or discussion of an hour and a half, and that ninety-five other people will do the like for their respective subjects within the week, I give it up. I know it cannot be done, even if I am allowed unlimited use of technical language, which appears, somewhat irrationally, to annoy some of your correspondents. I wonder why? Would they wish us always to paraphrase electricity as that which is produced when amber is rubbed with cat-skin? Science without technical language is very much like "French without accents."

We might do better if we concentrated our attention on the successful execution of what ostensibly we attempt. Let us give up arranging meetings at a time when we know, from the circumstances of the case, people cannot and will not attend, and give up also the formality of voting on questions which have been neither read nor circulated. If the popular evening lecture has ceased to be attractive, let us devise some other form of after-dinner appeal with scientific accessories; the Red Lions ought not to lag behind the kinema. If we wish to address an audience, let us address the audience; if we have something to say, let us say it; if we wish to make ourselves heard, let us make ourselves heard or know the reason why; and, finally, if the proceedings are reported, let the Sections make skilled reporting a part of their business. The word recorder seems to have got adrift from its moorings lately. Machinery in motion always has an irresistible attraction; if the meetings of the British Association presented examples of scientific purpose, perfectly managed and scientifically executed, they would be acceptable in many large towns, although the subject-matter might not all of it appeal to the man in the street. It ought not to be forgotten at this particular time that in 1903 Sir Norman Lockyer endeavoured to strengthen the hold of the British Association by keeping its organisation in operation throughout the year, and when the Association declined the suggestion, sought other means of giving expression to his views.

October 3.

NAPIER SHAW.

If you do not consider the subject of the British Association, which has been so fully discussed in recent issues of *NATURE*, to be now exhausted, I should like to state briefly how it appears to me.

The Association had at first six "Committees of Sciences." They were in 1835 converted into Sections. The following year another Section was added for Mechanical Science. The Sections continued to be seven only for the next fifty years, when H (or Anthropology) became a separate Section. Botany, Physiology, Educational Science, and Agriculture have since been added, making up the twelve existing Sections.

The Association was not in a hurry, for it was well aware of the practical difficulties arising from a multiplicity of Sections, but these added Sections have certainly not detracted from its popularity. The Conference of Delegates is another modern development of the work, and keeps interest in that work alive in many parts of the country.

A still more recent extension of the activities of the Association is the Citizens' Lectures, which were very successful at Cardiff. The meeting there was a good one, and would have been much larger but for the exorbitant railway fares. The address of the president, Prof. Herdman, was both brilliant and practical, and will, I hope, be fruitful in the near future.

EDWARD BRABROOK.

October 1.

The Examination System.

PROF. H. E. ARMSTRONG's address on the university problem in London, published in *NATURE* of September 23, induces me to make the following remarks with special reference to the examination system in England.

The chief defects are:

(1) Expecting a candidate to remember details necessary for giving a complete answer to an essay question.

(2) Expecting him to answer a lot of questions in three hours.

This has been improved on recently by giving highest honours for five questions out of ten. But, in my opinion, at most four essay questions in three hours are all that should be expected; and in the case of difficult mathematical or similar questions not more than three.

It is notorious that the best men do not always come out at the top, partly because some hate to be hustled, others think slowly, and others still are not walking encyclopædias even in their own subject.

I know of an institution where the examinations are quite as well managed as in other educational institutions, though I admit the syllabus is so large for the time allowed that there is a good deal of "cram" necessary. As a rule, a student who is good at any subject seldom comes out very high up, whereas others who often have no taste or gift for a subject are placed at the top. Also, there is a student who can come out top of nearly every examination because he is good at examinations.

I suggest the following improvements:

(1) That students be continuously examined throughout the period of their instruction by weekly or monthly papers and practical work.

(2) That there be fewer questions set in essay or problem papers. Details I have already suggested.

(3) That manuscript note-books of any kind be used by students in all theoretical as well as practical examinations, particularly in scientific subjects.

OXFORD M.A.

An Awkward Unit.

THERE has lately been introduced on the Daily Weather Report a small map showing barometric tendency. The barometric change from 4h. to 7h. is given as "a multiple of the half-millibar, that unit having been found convenient for reading the barograms and adopted for telegraphic reporting" (*Meteor. Mag.*, August, 1920, p. 150).

It is to be regretted that European meteorologists appear to be unaware of the fact that the megadyne or megabar atmosphere was correctly defined by Prof. Theodore Richards in his classic paper on "New Methods of Compressibility," published by the Carnegie Institution in 1903, and in later papers. The bar is a pressure unit expressed in terms of force, and is equal to one dyne per square centimetre. This is the bar of American chemists and physicists, and has been in use at Blue Hill Observatory since 1914. The term "millibar" which meteorologists hastily adopted in 1913 appears to us to be a misnomer for "kilobar."

There are many solid arguments in favour of the use of a megabar atmosphere. These will not be repeated here, but it may be pointed out that the expression "multiple of a half-millibar" is awkward. It is so much easier to use the proper definition "500 bar."

Isallobars can then be drawn for any desired value, while it would be rather troublesome to express the same values in fractional parts, such as "one-fifth millibar," meaning a 200-bar change.

ALEXANDER MCADIE.

Harvard University, Blue Hill Observatory,
Readville, Mass., September 23.

Absorption Spectrum of Hydrogen Chloride.

THE unexpected satellites which Imes (*Astrophysical Journal*, November, 1919) found beside each line in the HCl absorption band at 1.76μ , and which measurements of his curves show to have an average wave-